

Tranverse Abdominal Island Flap for Breast Reconstruction

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การใช้ส่วนของผนังหน้าท้องตามขวางโดยมีเส้นเลือดเป็นขั้วไปสร้าง เต้านม

รณชัย โคมทอง, ชูศักดิ์ คุปตานนท์, เชิดชัย ตันตศิรินทร์
ภาควิชาศัลยศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

ในผู้ป่วยที่เป็นมะเร็งเต้านม การสร้างเต้านมให้ผู้ป่วยใหม่ หลังจากผู้ป่วย
ต้องถูกตัดเต้านมทิ้งไปจะช่วยลดทุกข์ทางใจให้แก่ผู้ป่วยจากการที่ต้องสูญเสียเต้านม
ไปจากการผ่าตัดได้ วิธีการผ่าตัดโดยใช้ส่วนของผิวหนังหน้าท้องตามขวางโดยมี
เส้นเลือดเป็นขั้วไปสร้างเต้านมใหม่เป็นวิธีการผ่าตัดใหม่ซึ่งมีข้อดีคือ มีรูปร่าง
ความหนาและสีใกล้เคียงกับเต้านม, แผลเป็นหน้าท้องไม่ชัดเจน ทำให้หน้าท้อง
เต่งตึงและไม่จำเป็นต้องใช้ถุงยางซิลิโคนมาเสริมเพื่อใหขนาดของเต้านมใหญ่ขึ้น
ผู้เขียนได้รายงานผู้ป่วย 1 ราย ประสบผลสำเร็จจากการใช้ วิธีการดังกล่าวมาสร้าง
เต้านมให้ผู้ป่วยใหม่ทันทีหลังตัดเต้านมทิ้งไป ได้บรรยายถึงการเลือกผู้ป่วย การ
เตรียมผู้ป่วยก่อนผ่าตัด วิธีการผ่าตัด ผลดีและผลเสียของการผ่าตัด

INTRODUCTION

The psychosocial literature is replete with studies describing morbidity associated with mastectomy, "the stress of which causes considerable upset in virtually all areas of a patient's life" Specific types of psychological distress resulting from radical surgery include clinically significant mood disturbance, decreased sexual interest and satisfaction, increased self-consciousness about clothes

and revealing underwear, negative changes in one's body image, fears about recurrence and, of late, anxiety about the relative merits of breast reconstruction. Though about 150 mastectomies was performed annually in Srinagarind Hospital, none of them was undergone breast reconstruction so far. Many factors were attributable for not to have breast reconstruction in the past. but 2 major variables play an important role

for final decision. Those of them are surgeon's motivation and patient's motivation. Knowledge of the procedure, economic resources, medical conditions, psychological dynamic, and REACTIONS of other persons in the patient's life, including spouse and mother are major factors playing behind the scene. At the present time motivation of both patients and surgeons are much increased due to knowledge and information about the outcome of the procedure and satisfaction of the patients who had ready undergone breast reconstruction are gained. With continued progress in reconstructive techniques, plastic surgeons can find many options of appropriate procedure to fit in patient's medical conditions, economic status, psychological dynamics and reactions of significant others in the patient's life.

Each breast reconstructive procedures has its own advantages and disadvantages, there will be several options to choose from in a given situation and the most appropriate selection can be achieved only through preoperative planning, patient education and frank discussion. A recent innovation in breast reconstruction is the use of a transverse rectus abdominis myocutaneous flap. The advantage of this method include an ideally perineal donor site scar, completely reconstructed breast with autogeneous tissue and the convenience of operating on a patient lying supine on the operation table. There is also the added benefit of an abdominoplasty.

Case Report

A case of 30 year old married woman who presented with 2 cm. lump on outer quadrant of her right breast. Histological report after excisional biopsy was intraductal carcinoma. The modified radical mastectomy was offered to her. Due to her young age, early stage of breast cancer, slightly muscular complexion no preexisting abdominal scar and low economic status,

transverse rectus abdominal island flap was selected after long discussion on advantages and disadvantages of possible various types of breast reconstruction.

Preoperative Preparation and Marking

Considering to her healthy muscular complexion with planning of breast reconstruction she was not put under sit-up exercised program to strengten the rectus abdominis muscular system. The night before surgery the patient is marked while awake and in the upright position to estimate the site of properly plased transverse rectus abdominis flap and the appropriated incision of modified radical mastectomy. The suprasternal notch and the submammary fold were demarcated. A line 3 to 4 cm. craniad to the submammary fold was marked parallel to the submammary fold as a planned incision accomodate the descent of the fold during closure of the abdominal wall. (Fig I)

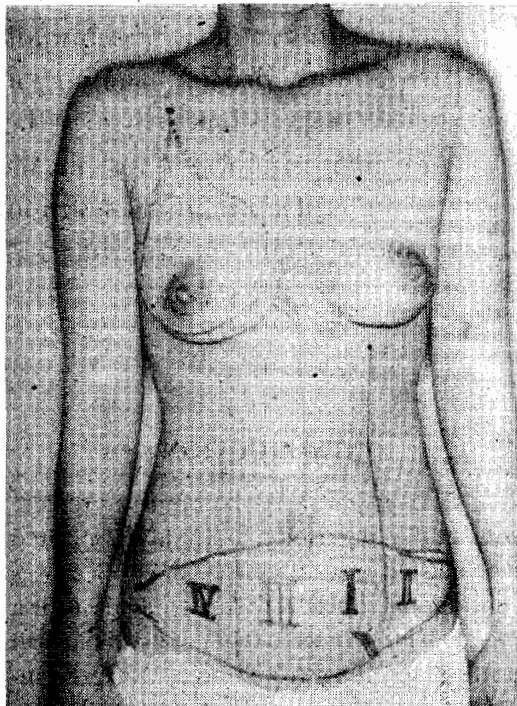


Fig. I Preoperative markings of contralateral lower transverse abdominal island flap.

Raise the Flap

The incision was made on lower abdomen in elliptical fashion from lateral (zone IV, and III) to medial in plane above the fascia to the midline (Fig.II). Musculo-cutaneous perforators were identified at the lateral border of the anterior rectus sheath.

The myocutaneous hemiellipse (Zone I and II) is similarly incised and was dissected in the same plane above the fascia from lateral to medial.

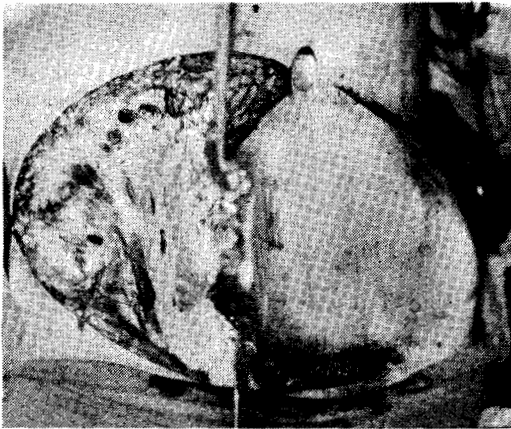


Fig. II Raising the flap from lateral position (Zone IV) medially.

Raise The Anterior Abdominal Wall

Leaving the circumscribed umbilicus in place, the anterior abdominal wall was progressively raised in a cranial direction in a plane above the deep fascia to the level of the left submammary fold (fig III).

Delivery of The Rectus Abdominis Muscle

An incision is made in the anterior rectus sheath laterally, from the subcostal margin above to the level of the flap below. The lateral margin of the muscle was raised, the muscle was separated from the subjacent posterior rectus sheath. The intercostal neuromuscular bundles entering the lateral

margin of the muscles were progressively identified, ligated, and transected. The medial margin of the anterior rectus sheath was incised about 0.5 cm. from the linea alba, from the level of the subcostal margin down to the pubic symphysis. (Fig. IV)

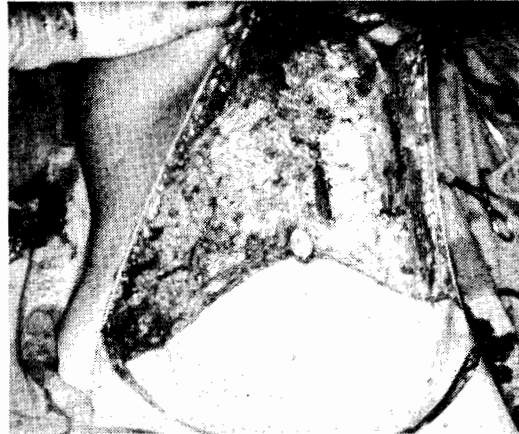


Fig. III Raising the anterior abdominal wall above the subcostal margin.



Fig. IV The rectus abdominis muscle is raised after complete dissection.

The suprapubic insertion of the rectus muscle was transected with cutting cautery and the muscle was anchored with two or three sutures to the dermis of the flap. The remaining lateral margin of the anterior rectus sheath was incised about 2 cm. medial to the lateral margin of the anterior rectus sheath, leaving a residual leaf of anterior rectus sheath interiorly.

The inferior epigastric artery and vein, identified traversing the transversalis fascia, were ligated and transected after complete delivery of the flap onto the anterior chest wall.

Closer of Donor Site

A proline mesh was sutured in position superficial to peritoneum below the arcuate line before turnover fascial flap from anterior rectus sheath of the right side was sutured into position to the borders of the defect to strengthen the integrity of anterior abdominal mass. (Fig. V and VI) The umbilicus was delivered through the created hole at the centre of anterior abdominal flap.

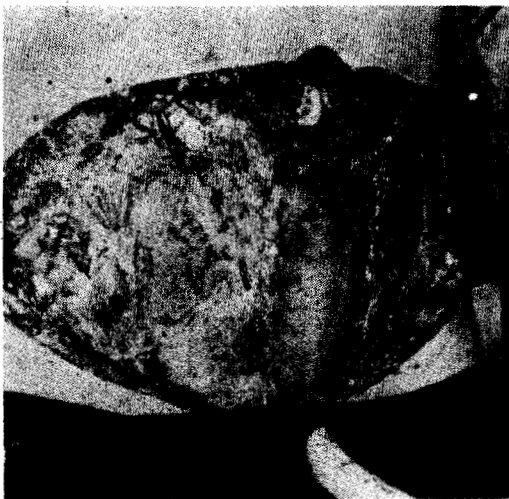


Fig. V Proline mesh is sutured into defect of (L) lower abdomen.

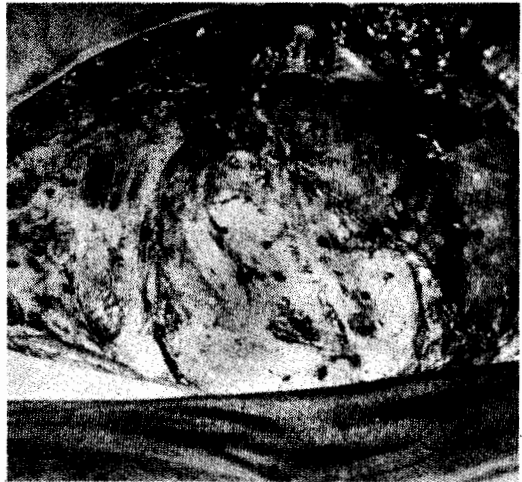


Fig. VI Contralateral turnover fascial flap from anterior rectus sheath of the (R) side was sutured covering the proline mesh.

Inset The Flap

The flap was brought through subcutaneous tunnel in clockwise rotation (Fig. VIII) and insert into the defect of anterior chest wall of right side after modified radical mastectomy. (Fig. IX) Zone IV were brought into superolateral position to facilitate venous drainage of the flap before fashioning the breast wound was performed.

The vascular assesment of the flap was obtained by injection of fluoescin intravenously. Some part of non viable tissue in the distant extent of the zone IV area was excised.

There was slightly loss of upper margin of the flap which was debrided and closed later on. (Fig X) The patient is satisfied with the result and resume to her social life and sexual life without embarrassment. (Fig XI)

Discussion

During the past decade, numerous procedures have been suggested as treatment modalities for primary operable breast

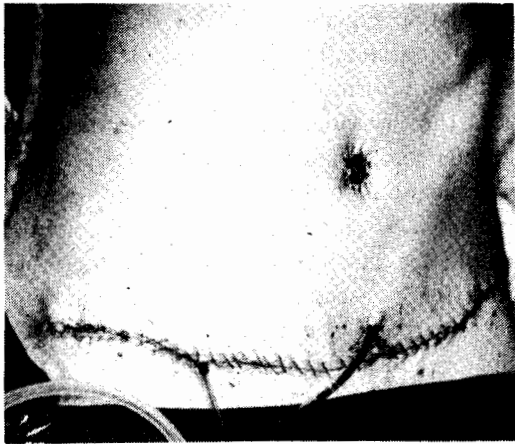


Fig. VII Closure of donor site with delivered umbilicus to new centre of anterior abdominal flap.

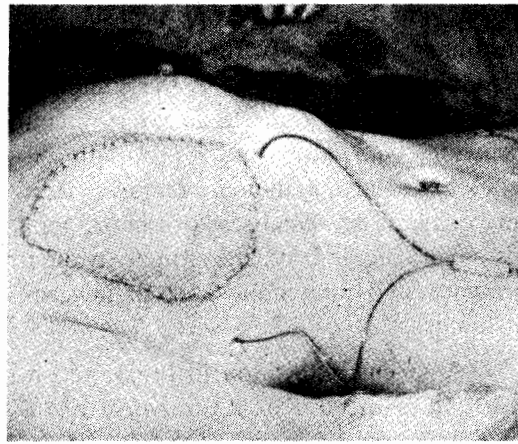


Fig. IX Completeness of breast reconstruction.



Fig. VIII Inset the flap by clockwise rotation through subcutaneous tunnel onto the chest wall.

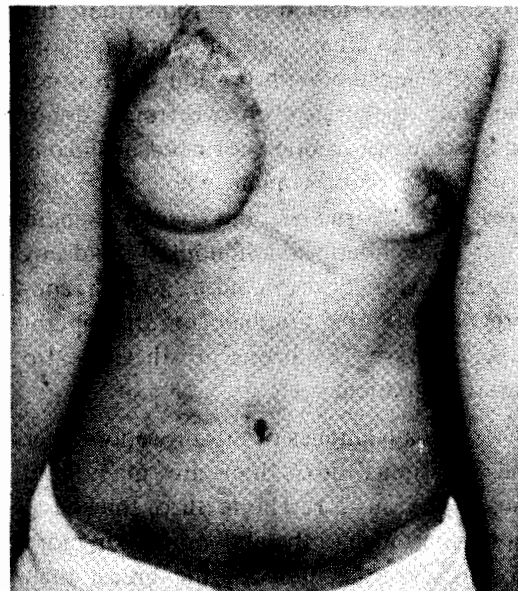


Fig. X Three month postoperative period.

cancer and they range from radical mastectomy to wide local excision of the tumor. Immediate reconstruction at the same time as the ablative procedure was carried out by Georgiade under selected criteria with minimal complication and without demonstrable effect on the natural course of the disease.



Fig. XI Normal appearance under brassiere.

It is of utmost importance that the mastectomy be performed in the usual and customary manner without compromise made in the skin margins of the completeness of the procedure to facilitate reconstruction. Our patient has appropriate specific clinical and pathologic features based on younger age, small size of tumor, good histological grade of the tumor without presence of lymph node and no invasion of tumor.

A recent innovation in breast reconstruction is the use of a transverse rectus abdominis myocutaneous flap, Use of the transverse abdominal island flap for reconstruction has enabled us to redistribute the body's excess fat and skin into more fashionable and anesthetic proportions. It restores the body appearance on two fronts, donor and recipient, an does not need a silicone prosthesis. Any woman who wants her breast reconstructed and would benefit from concomitant abdominoplasty and any woman who desires autogenous reconstruction may be suitable for this operation. Expense for silicone prosthesis is also saved for patient.

The advantages of this procedure over the latissimus dorsi flap are many and mostly obvious : 1. The texture, thickness, and color match of the abdominal skin more closely resemble those of the breast than those of the back; 2 the size of the ellipse of skin and fat is large and allows us to hide one scar in the shadow of the inframammary fold. The patched appearance that often "tells the story" of the latissimus flap is therefore avoided; (3) the need for awkward intraoperative repositioning of the patient, as in the latissimus dorsi flap, is precluded; 4. The donor site of the abdominal flap is the conspicuous, easier to conceal, and gives the patient "Something" in return : An abdominoplasty; (5) the use of a silicone prosthesis, a foreign body that evokes reactions is eliminated. In spite of

many advantages, the transverse abdominal island flap represents one of the most detailed and complex operations. It is a procedure of formidable magnitude and harbors the potential for both numerous and serious complication. The two relative contraindications to this operations are obesity and heavy smoking. Rectus abdominis should be strong enough to protect the underlying vascular pedicle to prevent flap necrosis. So patient selection, suitability and preoperative preparation are the most importance to determine success of this operation.

Summary

Our personal experience of one case with other reviewed paper of transverse abdominal island flap for breast reconstruction after tumor ablation have been most gratifying. The operation remains a complex and detailed procedure. Nevertheless it is a reliable, safe, and formidable flap which in the hands of the careful and experienced practitioner produces results unequaled by any other technique. The technique must, however be placed in proper perspective of patient selection, suitability, and preparation for this operation.

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